

tacle 21 due to design constraints imposed by the style and placement of the keypad 16 on the keyboard portion 14. Additional embodiments place the stylus receptacle 21 on the inside of the cover portion 12 on either or both sides of the intended location for the computer apparatus.

FIG. 7 is a side elevational view of the keyboard system of FIG. 1 supporting a PDA. The illustration shows one of two side flaps 23 on either side of the cover portion 12 that provide rigidity to cover portion 12 and further serve to protect the keyboard portion 14 from side entry of dirt, dust, and fluids when the cover portion 12 is closed. Additionally, the side flaps contain a latch mechanism 32 which will be discussed in detail with reference to FIG. 10A.

FIGS. 8A-8C are side elevational views of the keyboard system of FIG. 1 with the cover portion 12 opened to different positions. As shown, rotation around the axis of a hinge allows the cover portion 12 to move from a closed position wherein the angle between the plane of the cover and the support plane 24 is 0°, and any number of open positions wherein the angle between the plane of the cover and the support plane 24 is at least 90° and preferably 135°, which would place the cover such that it would support a 3COM Palm PDA at the recommended viewing angle. The cover, which serves as a support easel for the PDA, is supported in these multiple positions by the aforementioned detent mechanism. Preferably, the hinge is part of the interface assembly 19 as described above with reference to FIG. 4A, however in other embodiments this is not necessarily so. In other embodiments the hinge may be designed as a separate component from the interface assembly 19, or alternately, the cover portion 12 may attach to the keyboard portion 14 by hinges directly attached to both pieces.

FIG. 9 is a top plan view of the keyboard system of FIG. 1 with the cover portion closed and the stabilizing leg 22 fully extended. In this perspective the stabilizing leg 22 can be seen to have a semicircular cut-out in the middle of its cross-member. This feature is designed to allow the stabilizing leg 22 to be grasped firmly by the customer and also reduces the overall weight of the keyboard system 10.

FIG. 10 is a perspective view of the keyboard system of FIG. 1 in its closed orientation. The side flaps 23, discussed above in reference to FIG. 7, in the preferred embodiment contain a latch mechanism 32. The latch mechanism is shown in greater detail in FIG. 10A and consists of a small tab 31 on the inside of the side flap 23 and a corresponding indentation on the exterior of the base 27. When the tab 31 is engaged in the corresponding indentation the cover closes securely such that it is not easily opened accidentally. Tab 31 is shown in FIG. 1. In other embodiments of the present invention the latch mechanism 32 is placed on the front edge of the cover portion 12, and still other embodiments do not contain a latch at all. Further, some embodiments also do not contain side flaps 23.

FIGS. 11A and 11B are perspective and side elevational views, respectively, of the keyboard system 10 with a non-standard keypad and an easel leg 26 rather than a stabilizing leg 22. As noted previously, the preferred embodiment of the present invention incorporates a standard QWERTY keypad 16, however other embodiments of the invention utilize other keypad options. As shown in FIG. 11A, alternative keypad 16 designs, for example the 10-key layout frequently used in inventory control, would not require as wide of a keyboard portion 14 as the preferred embodiment.

The stabilizing feature shown in FIGS. 11A and 11B is in the form of an easel leg 26 that folds flush against the

exterior surface of the cover portion 12. When the keyboard system 10 is in use, the easel leg 26 folds out to an open position as shown in FIGS. 11A and 11B. In another embodiment of the invention, the easel leg 26 folds into a recessed portion on the exterior surface of the cover portion 12. Like the stabilizing leg 22, the easel leg 26 provides support to prevent the keyboard system from tipping over backwards.

Although the foregoing invention has been described in some detail for purposes of clarity of understanding, it will be apparent that certain changes and modifications may be practiced within the scope of the appended claims. Accordingly, the present embodiments are to be considered as illustrative and not restrictive, and the invention is not to be limited to the details given herein, but may be modified within the scope and equivalents of the appended claims.

What is claimed is:

1. A hand held computer keyboard system comprising:

a keyboard portion having a front and a back and defining a support plane and containing a keypad;

a cover portion having an inner surface and an outer surface, said cover portion being coupled proximate to said back of said keyboard portion such that it can pivot from a closed position with said inner surface overlying said keyboard portion and an open position oriented at an angle to said support plane;

an interface assembly coupled to said cover portion, said interface assembly including an I/O connector configured to engage an I/O port of a computerized apparatus as said computerized apparatus is being supported by said inner surface of said cover portion; and

a plurality of wires connecting said I/O connector to said keyboard portion through said interface assembly.

2. A hand held computer keyboard system as recited in claim 1 further comprising:

a stabilizing leg coupled to at least one of said keyboard portion and said cover portion to inhibit rotational movement of said keyboard portion relative to said support plane due to pressure exerted on said cover portion.

3. A hand held computer keyboard system as recited in claim 2 wherein said stabilizing leg is coupled proximate to said back of said keyboard.

4. A hand held computer keyboard system as recited in claim 3 wherein said stabilizing leg can retract into said keyboard portion.

5. A hand held computer keyboard system as recited in claim 2 wherein said stabilizing leg is coupled to said outer surface of said cover portion.

6. A hand held computer keyboard system as recited in claim 5 wherein said stabilizing leg can fold against said cover portion.

7. A hand held computer keyboard system as recited in claim 1 wherein said inner surface of said cover portion may be held at multiple angles relative to said support plane.

8. A hand held computer keyboard system as recited in claim 7 wherein said multiple angles range between 90 and 135 degrees relative to said support plane.

9. A hand held computer keyboard system as recited in claim 1 further comprising a stop coupled to one of said keyboard portion and said cover portion and engaging the other of said keyboard portion and said cover portion to limit the pivotal movement of said cover portion.

10. A hand held computer keyboard system as recited in claim 1 wherein said keypad is arranged in the standard QWERTY format.

11. A hand held computer keyboard system as recited in claim 1 wherein said keypad is arranged in the standard 10-key data-entry format.